PRELIMINARY DETERMINATION
ON PERMIT APPLICATION

Date of Mailing: May 10, 2019

Name of Applicant: Decker Coal Company

Source: Decker Mine

Proposed Action: The Department of Environmental Quality (Department) proposes to issue a permit, with conditions, to the above-named applicant. The application was assigned Permit Application Number 1435-08.

Proposed Conditions: See attached.

Public Comment: Any member of the public desiring to comment must submit such comments in writing to the Air Quality Bureau (Bureau) of the Department at the address in the footer of this cover letter. Comments may address the Department's analysis and determination, or the information submitted in the application. In order to be considered, comments on this Preliminary Determination are due by May 28, 2019. Copies of the application and the Department's analysis may be inspected at the Bureau's office in Helena. For more information, you may contact the Department.

Departmental Action: The Department intends to make a decision on the application after expiration of the Public Comment period described above. A copy of the decision may be obtained at the Bureau's office in Helena. The permit shall become final on the date stated in the Department's Decision on this permit, unless an appeal is filed with the Board of Environmental Review (Board).

Procedures for Appeal: Any person jointly or severally adversely affected by the final action may request a hearing before the Board. Any appeal must be filed by the date stated in the Department's Decision on this permit. The request for a hearing shall contain an affidavit setting forth the grounds for the request. Any hearing will be held under the provisions of the Montana Administrative Procedures Act. Submit requests for a hearing in triplicate to: Chairman, Board of Environmental Review, P.O. Box 200901, Helena, MT 59620.

For the Department,

Julie A. Merkel
Permitting Services Section Supervisor
Air Quality Bureau
(406) 444-3626

Rhonda Payne
Air Quality Specialist
Air Quality Bureau
(406) 444-5287

JM:RP
Enclosure

MONTANA AIR QUALITY PERMIT

Issued To: Decker Coal Company
P.O. Box 12
Decker, MT 59025-0012

MAQP: #1435-08
Application Complete: April 9, 2019
Preliminary Determination Issued: May 10, 2019
Department's Decision Issued:
Permit Final:

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Decker Coal Company (DCC) pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

The Decker Mine is a surface coal mine located about 3 miles northeast of Decker, Montana. The mine permit areas encompass all or part of the following areas: Sections 27, 28, 29, 31, 32, 33, and 34 of Township 8 South, Range 40 East; Sections 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24 and 28 of Township 9 South, Range 40 East; and Sections 3, 4, 5, 6, 7, 8, 9, 10 17, 18, and 19 of Township 9 South, Range 41 East, in Big Horn County, Montana.

B. Current Permit Action

On November 30, 2018 (with additional information received on February 21, 2019 and April 9, 2019) the Department of Environmental Quality (Department) received a request from DCC to modify MAQP #1435-07 to include information associated with a proposed mine expansion, referred to as the Northeast Extension. This proposed area will add 1,651 acres to the Decker Mine disturbance area, where mining activities would occur for a period of 15 years, from 2018 through approximately 2034. The proposed modification requires DCC to submit an ambient air quality modeling analysis and updated emissions inventory, which are based on the maximum anticipated production rate.

Additionally, DCC has requested two further changes. First, the retail coal operation has been discontinued and DCC requests that it be removed in this action. Second, DCC requests that the condition that limits diesel consumption for stationary equipment to 170,000 gallons per year be removed. The oxides of nitrogen (NOx) potential to emit (PTE) from the diesel engines were above the Title V Operating Permit threshold of 100 tons per year; thus, DCC requested federally-enforceable limits to remain a minor source. However, the assertion that the diesel engines were stationary was incorrect. DCC has demonstrated, and the Department has concurred, that the equipment on which this restriction was placed are in fact mobile rather than stationary. The removal of this condition would mean DCC is no longer classified as a synthetic minor source with respect to ARM 17.8.1204(3).

The proposed expansion does not include new or modified emission units. The projected life-of-mine emissions inventory and air dispersion modeling analyses are based on equipment already included in the permit. The proposed expansion and associated activities do not result in an increase in the currently permitted maximum coal production rate of 16 million tons per year. No further limits were established as part of this permit action. MAQP 1435-08 makes the requested updates, as well as to update the emissions inventory, rule references and permit conditions currently used by the Department.

Section II: Conditions and Limitations

A. Emission Limitations

1. Maximum annual coal production shall be limited to 16 million tons per year (TPY). Any increase above this level may require a permit modification (ARM 17.8.749).

2. DCC shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any process or fugitive emission source that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (40 CFR 60, Subpart Y, ARM 17.8.304, and ARM 17.8.340).

3. DCC shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308 and ARM 17.8.752).

4. DCC shall treat all unpaved portions of the haul roads, access roads, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.3 (ARM 17.8.749 and ARM 17.8.752).

5. The following list contains the required emission control technologies and techniques (ARM 17.8.749).

   a. Truck Dumps - Maintaining full traps and using dust deflector plates to direct dust back into the traps.

   b. Primary and Secondary Crushers - Conveyor belt skirting, Fog dust suppression system, and Type 16D American Air Filter Dust Collectors. The Fog dust suppression system uses compressed air and water to create a mist for dust control. The air filter dust collector, on the tail of conveyor belt #2 is used on an as needed basis.

   c. Coal Conveyors - Enclosed on three sides with the bottom partially open.

   d. Conveyor Transfer/Discharge Points – Conveyor belts #1, #2, and #3: Conveyor belt skirting and a Fog dust suppression system which is only used in above-freezing weather on conveyor belts #2, and #3. Conveyor belts #4, #5, and #6: Conveyor belt skirting. Conveyor belt #5: Type 16D American Air Filter Dust Collector.

e. Coal Storage - Enclosed silo storage (two 13,500-ton capacity at West Decker, four 15,000-ton capacity at East Decker) for crushed coal; open stockpile for uncrushed coal with contouring and watering as necessary.

f. Haul and Access Roads - Application of chemical stabilization and/or watering as necessary, with on-going grading to remove loose debris.

g. Overburden and Coal Removal - Minimize fall distance.

h. Overburden and Coal Blasting - Conduct in such a manner as to prevent over-shooting and to minimize the area to be blasted.

i. Disturbed Areas - Minimize area of disturbance and prompt re-vegetation.

6. DCC shall comply with all applicable standards and limitations, and the reporting, recordkeeping, and notification requirements as required by 40 CFR 60, Subpart Y - Standards of Performance for Coal Preparation Plants (ARM 17.8.340 and 40 CFR 60, Subpart Y).

B. Testing Requirements

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

2. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. DCC shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. DCC shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include ***the addition of a new emissions unit,*** change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by DCC as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

D. Ambient Monitoring Requirements

DCC shall operate an ambient monitoring network as described in Attachment 1 of this permit. The monitoring plan will be periodically reviewed by the Department and revised if necessary (ARM 17.8.749).

Section III: General Conditions

A. Inspection – DCC shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment such as Continuous Emission Monitoring Systems (CEMS) or Continuous Emission Rate Monitoring Systems (CERMS), or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if DCC fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving DCC of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*. (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement action as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by DCC may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

ATTACHMENT 1

AMBIENT AIR MONITORING PLAN
DECKER COAL COMPANY
MAQP #1435-08

1. This ambient air monitoring plan is required by MAQP #1435-08 which applies to the Decker coal mining operation near Decker, MT. The Department may modify the requirements of this monitoring plan. All requirements of this plan are considered conditions of the permit.

2. DCC shall operate and maintain six air monitoring sites near the mine and facilities. The exact locations of the monitoring sites must be approved by the Department and meet all the siting requirements contained in the MT Quality Assurance Manual including revisions, the EPA Quality Assurance Manual including revisions, and 40 Code of Federal Regulations (CFR) Part 58, or any other requirements specified by the Department.

3. DCC shall continue air monitoring following issuance of this permit. The air monitoring data will be reviewed by the Department and the Department will determine if continued monitoring or additional monitoring is warranted. The Department may require continued air monitoring to track long-term impacts of emissions from the facility or require additional ambient air monitoring or analyses if any changes take place regarding quality and/or quantity of emissions or the area of impact from the emissions.

4. DCC shall monitor the following parameters at the sites and frequencies described in the table below:

AQS# & Site Name	UTM Coordinates	Parameter	Frequency
30-003-0046 Decker West Met	Zone 13 N 4,991,363 m E 356,920 m	Wind Speed & Direction, Sigma Theta, Temperature, Precipitation	Continuous
30-003-0023 Niner Ranch #3 North Decker Mine	Zone 13 N 4,995,534 m E 356,713 m	PM_{10}[1] Local Conditions: 85101 Standard Conditions: 81102	Every 6th Day
30-003-0017 Holmes Ranch #7 East of East Pit	Zone 13 N 4,990,495 m E 363202 m	PM_{10} Local Conditions: 85101 Standard Conditions: 81102	Every 6th Day
30-003-0014 E. Decker Office #4	Zone 13 N 4,991,651 m E 359,121 m	PM_{10} Local Conditions: 85101 Standard Conditions: 81102	Every 6th Day
30-003-0011 East Pit & County Road #5/#6	Zone 13 N 4,990,535 m E 357,236 m	PM_{10} Reporting PM_{10} Collocated[2] Local Conditions: 85101 Standard Conditions: 81102	Every 6th Day Every 6th Day
30-003-0021 #8	Zone 13 N 4,988,308 m E 361,501 m	PM_{10} Local Conditions: 85101 Standard Conditions: 81102	Every 6th Day

[1] PM_{10} = particulate matter less than 10 microns. [2] The requirement for a collocated PM_{10} sampler may be waived if the monitor operator operates a collocated PM_{10} sampler at another site.

Trace metal analyses of sample filters will not be required at this time; however, the Department may require these analyses in the future.

5. Data recovery (DR) for all parameters shall be at least 80%, computed on a quarterly and annual basis. The Department may require continued monitoring if this condition is not met. (Data Recovery = (Number of data points collected in evaluation period)/(number of scheduled data points in evaluations period)*(100%)).

6. Any ambient air monitoring changes proposed by DCC must be approved, in writing, by the Department.

7. DCC shall utilize air monitoring and quality assurance (QA) procedures which are equal to or exceed the requirements described in the MT Quality Assurance Manual including revisions, the EPA Quality Assurance Manual including revisions, 40 CFR Parts 50 and 58, and any other requirements specified by the Department.

8. DCC shall submit quarterly data reports within 45 days after the end of the calendar quarter and an annual data report within 90 days after the end of the calendar year. The annual report may be substituted for the fourth quarterly report if all information in paragraph 9 below for the fourth quarter is included in the annual report.

9. The quarterly data submittals shall consist of a narrative data summary and a data submittal of all data points in Air Quality System (AQS) format. This data must be submitted in an AQS compatible format. The narrative data summary shall include:

    a. A topographic map of appropriate scale with UTM coordinates and a true north arrow showing the air monitoring site locations in relation to the mine and facilities and the general area

    b. A listing of the individual data points;

    c. The first and second highest 24-hour concentrations for PM_{10};

    d. The first and second highest 24-hour concentrations for $PM_{2.5}$;

    e. The quarterly and monthly wind roses;

    f. A summary of the data completeness;

    g. A summary of the reasons for missing data;

    h. A precision data summary;

    i. A summary of any ambient air standard exceedances; and

    j. QA/QC information such as zero/span/precision, calibration, audit forms, and standards certifications.

10. The annual data report shall consist of a narrative data summary. The narrative data summary must be submitted to the Air Compliance Section and shall include:

    a. A topographic map of appropriate scale with UTM coordinates and a true north arrow showing the air monitoring site locations in relation to the mine and facilities and the general area;

b. The year's four highest 24-hour concentrations for PM_{10};

c. The year's four highest 24-hour concentrations for $PM_{2.5}$;

d. The annual average concentration for $PM_{2.5}$;

e. The annual wind rose;

f. A summary of any ambient standard exceedance; and

g. An annual summary of data completeness.

11. All records compiled in accordance with this Attachment must be maintained by DCC as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

12. The Department may audit (or may require DCC to contract with an independent firm to audit), the air monitoring network, the laboratory performing associated analyses, and any data handling procedures at unspecified times.

13. The electronic reports should be sent to:

The Department of Environmental Quality
Attention: Air Quality Bureau – Field Services Section Supervisor

Montana Air Quality Permit (MAQP) Analysis
Decker Coal Company
MAQP #1435-08

I. Introduction/Process Description

Decker Coal Company (DCC) owns and operates a surface coal mine. The facility is located about 3 miles northeast of Decker, Montana. The mine permit area encompass all or part of the following areas: Sections 27, 28, 29, 31, 32, 33, and 34 of Township 8 South, Range 40 East; Sections 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24 and 28 of Township 9 South, Range 40 East; and Sections 3, 4, 5, 6, 7, 8, 9, 10 17, 18, and 19 of Township 9 South, Range 41 East, in Big Horn County, Montana.

A. Permitted Equipment

The mine operations at the Decker mine include the following:

- Centralized coal processing and handling systems including truck dump, crushers, conveyors, storage barn and train loadout (separate systems located at West and East Decker)
- Auxiliary equipment includes a dragline, trucks, shovels, scrapers, drills, dozers, loaders, etc., as applicable
- A crusher, screen, several conveyors, and appropriate storage silos and stockpiles

The equipment used as part of the Northeast extension already exists at the West and East Decker sites and will be moved from those locations once mining commences at the Northeast extension.

B. Source Description

The Decker mine is an open pit surface coal operation located about 3 miles northeast of Decker, Montana. The mine includes the West Decker mining area and facilities and the East Decker mining area and facilities. The Tongue River and Tongue River Reservoir run between the two mining areas. The mine uses standard surface mining and reclamation techniques and equipment. The facilities (separate facilities located at East and West Decker) include truck dumps, crushers (primary and secondary), conveyors, silo storage, and rail loadouts.

Overburden removal begins with drilling and blasting to facilitate digging and is accomplished using scrapers, front-end loaders, shovels, or draglines. All overburden is currently back-filled in mined pits to build the reclaimed surface. Some scoria is also processed for on-site road surfacing. Coal is drilled and blasted and then removed by scrapers, backhoe, front-end loaders, or shovels. The coal is processed and blended in one of two plants prior to shipment.

All mined-out pits are backfilled during mining. The approved reclaimed surface is constructed and the available soil material is spread over the area as approved by the mining permit. Reclamation activities consist of preparing a seed bed and either seeding or transplanting the approved mixture of grasses, shrubs, forbs, and trees.

C. Permit History

MAQP #1435-00 was issued on October 23, 1980, for the West Decker operation. **MAQP #1505** was issued on January 9, 1981, for the East Decker operation. DCC began mining in the area in the early 1970s.

MAQP #1435-01 was issued on February 5, 1996, to update, consolidate, and replace MAQPs #1435-00 and #1505. The coal production limit under the consolidated MAQP was 16-million tons per year (TPY) compared to a total of 16.4-million TPY under the separate MAQPs.

MAQP #1435-02 was issued on March 31, 2000, for the installation and operation of a retail coal sales yard. The modification included the installation and operation of a crusher, screen, several conveyors, and appropriate storage silos and stockpiles. The retail sales yard was subject to 40 CFR 60, Subpart Y. The conditions relevant to the retail coal sales operation were added to the MAQP. Also, the rule references were updated.

On April 9, 2001, the Department of Environmental Quality (Department) received a MAQP application for the installation and operation of four or five temporary, diesel-fired generators at the Decker mine. DCC maintained that these generators were necessary because the high cost of electricity has the potential for significant negative effects on their mine operations. The generators would not operate for a period of more than 2 years and their operation was not expected to last for extended periods of time, but rather only on an interim basis while DCC pursued a more economical supply of power.

The leased generators were to only be used on an interim basis, when commercial power was too expensive and affecting mining operations. Additionally, the installation of these generators qualified as a "temporary source" under the Prevention of Significant Deterioration (PSD) permitting program because the MAQP limited the operation of these generators to a period of less than 2 years, or until a suitable power contract was obtained, whichever occurs first. Therefore, DCC did not need to comply with Administrative Rules of Montana (ARM) 17.8.804, 17.8 820, 17.8.822, and 17.8.824. Even though the portable generators were considered temporary, the Department required compliance with Best Available Control Technology (BACT) and public notice requirements. Therefore, compliance with ARM 17.8.819 and 17.8.826 was ensured. In addition, DCC was responsible for complying with all applicable ambient air quality standards. **MAQP #1435-03** replaced MAQP#1435-02.

On November 18, 2004, the Department received a request from DCC to relax ambient air monitoring requirements for their operations. On December 8, 2004, the Department responded to this request by indicating that a conditional discontinuation of ambient monitoring from collocated samplers located at Site #5/6 (30-003-0011) may be appropriate pending an increase in mining and/or reclamation activities in the East Pits.

On December 27, 2004, the Department received a response from DCC stating that renewed regular coal mining activities in the East Pits, which currently are not being

used as a coal resource, would be an appropriate trigger to resume monitoring from collocated samplers located at Site #5/6, since these samplers would appropriately monitor emissions from this area of operations.

In addition, the letter received from DCC on December 27, 2004, questioned the continued need for collocated sampling. In some circumstances, where the company contracted to conduct the sampling operates other collocated and similar type samplers (i.e. Hi-Volume or Low-Volume samplers) at other locations within Montana, the Department may consider the discontinuation of collocated sampling. However, in this case, the Department was not aware of any other collocated sampling sites in Montana operated by Inter-Mountain Laboratories (IML), DCC's contracted sampling company. Therefore, the Department determined that DCC must continue to operate collocated samplers at the site.

On January 19, 2005, the Department sent DCC a letter requesting additional information regarding a proposed new collocated sampling site. In response to the Department's letter, on February 23, 2005, the Department received information from DCC proposing the new collocated sampling site at existing sampling Site #7 (30-003-0017).

After Department review of the available monitoring data, the Department determined that instead of using Site #7 for the collocated replacement station, the new collocated station should be located at Site #1 (30-003-0011). Sites #1 and #7 have roughly the same maximum values and annual averages for the last number of years; however, the Department believes that Site #7 values may have been influenced by the nearby gravel road, resulting in values that are less representative of DCC mining operations.

This MAQP action conditionally discontinued the requirement for collocated sampling at Site #5/6 (30-003-0011) pending renewed coal mining activities on a regular basis in the East Pits. In addition, this permit action added collocated sampling requirements at Site #1 (30-003-0011).

Finally, on May 31, 2001, DCC was issued a final MAQP for the installation and operation of up to five diesel-fired generators for use when commercial power is deemed too expensive. According to company personnel, to date, the units have never been installed or operated at the Decker mine. Therefore, in accordance with the requirements contained in the ARM 17.8.762, the Department removed the temporary portable generators and all associated limits and conditions from the MAQP under this permit action. **MAQP #1435-04** replaced MAQP #1435-03.

On November 9, 2007, the Department requested that DCC amend MAQP #1435-04 based on recommendations from a Department compliance inspection at the facility on May 10, 2007. The changes describe current dust control methods used on the Primary and Secondary Crushers and the Conveyor Transfer/Discharge Points. In addition, the emission inventory was amended to reflect more detail of the open storage of coal. Instead of a general open storage calculation, it is divided into open storage of unprocessed coal, and open storage of processed coal. **MAQP #1435-05** replaced MAQP #1435-04.

On September 13, 2010, the Department received a complete application from DCC requesting a modification to MAQP #1435-05. The modification was in response to a request from the Department to update the facility's MAQP to reflect equipment currently on site. In a May 11, 2010 Title V Applicability Analysis, DCC showed that with the listed equipment on site, potential emissions of oxides of nitrogen (NO_x) would exceed the Title V applicability threshold of 100 TPY.

This potential emission scenario overstated maximum emissions by a substantial amount because much of the equipment does not operate year-round, and some of the equipment does not operate 24 hours of the day. Therefore, DCC proposed federally enforceable limits to keep the facility's potential emissions below the Title V Operating Permit threshold. **MAQP #1435-06** replaced MAQP #1435-05.

On April 26, 2012, the Department received a letter from DCC requesting an administrative amendment to MAQP #1435-06. DCC had resumed mining activities at the East pits, and DCC proposed to reinstate a Hi-Volume sampler at site 30-003-0021. Inter-Mountain Labs (IML) Air Science would provide inspection, maintenance, and calibration services for this sampler prior to start up. The sampler would be operated in accordance with DCC's approved Quality Assurance Project Plan (QAPP). **MAQP #1435-07** replaced MAQP #1435-06.

D. Current Permit Action

On November 30, 2018 (with additional information received on February 21, 2019 and April 9, 2019) the Department of Environmental Quality (Department) received a request from DCC to modify MAQP #1435-07 to include information associated with a proposed mine expansion, referred to as the Northeast Extension. This proposed area will add 1,651 acres to the Decker Mine disturbance area, where mining activities would occur for a period of 15 years, from 2018 through approximately 2034. The proposed modification requires DCC to submit an ambient air quality modeling analysis and updated emissions inventory, which are based on the maximum anticipated production rate.

Additionally, DCC has requested two further changes. First, the retail coal operation has been discontinued and DCC requests that it be removed in this action. Second, DCC requests that the condition that limits diesel consumption for stationary equipment to 170,000 gallons per year be removed. The oxides of nitrogen (NOx) potential to emit (PTE) from the diesel engines were above the Title V Operating Permit threshold of 100 tons per year; thus, DCC requested federally-enforceable limits to remain a minor source. However, the assertion that the diesel engines were stationary was incorrect. DCC has demonstrated, and the Department has concurred, that the equipment on which this restriction was placed are in fact mobile rather than stationary. The removal of this condition would mean DCC is no longer classified as a synthetic minor source with respect to ARM 17.8.1204(3).

The proposed expansion does not include new or modified emission units. The projected life-of-mine emissions inventory and air dispersion modeling analyses are based on equipment already included in the permit. The proposed expansion and associated activities do not result in an increase in the currently permitted maximum coal production rate of 16 million tons per year. No further limits were established as

part of this permit action. MAQP 1435-08 makes the requested updates, as well as to update the emissions inventory, rule references and permit conditions currently used by the Department. **MAQP #1435-08** replaces MAQP #1435-07.

E. Additional Information

Additional information, such as applicable rules and regulations, BACT determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial quotations of some applicable rules and regulations that apply to the operation. The complete rules are stated in the ARM and are available, upon request, from the Department. Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 - General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emissions of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

   DCC shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution

control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Subchapter 2 - Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

DCC must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 - Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of 20% for all fugitive emissions sources and that reasonable precautions be taken to control emissions of airborne particulate. (2) Under this rule, DCC shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule. This rule applies to the portable generators. DCC shall not burn liquid or solid fuels containing sulfur in excess of 1 pound (lb) per million British Thermal Units (BTU) fired.

6. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by

reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). DCC is considered an NSPS affected facility under 40 CFR Part 60, and is subject to the requirements of the following subparts:

a. Subpart A - General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below.

b. Subpart Y - Standards of Performance for Coal Preparation Plants.

c. Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE). Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines, and owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005, are subject to this subpart. Based on the information submitted by DCC, the engines originally permitted to be used under MAQP #1435-08 are not subject to this subpart. However, as this permit is written in a de minimis friendly manner, future engines associated with this permit may be subject to this Subpart.

7. ARM 17.8.341 Standard of Performance of Hazardous Air Pollutants. DCC shall comply with the standards and provisions of 40 CFR Part 61, as appropriate.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. This rule incorporates, by reference, 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories. DCC is considered a potentially NESHAP-affected facility under 40 CFR Part 63 and may become subject to the requirements of the following subparts.

a. 40 CFR 63, Subpart A – General Provisions apply to all equipment or facilities subject to a NESHAPs Subpart as listed below.

b. 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants (HAPs) for Stationary Reciprocating Internal Combustion Engines (RICE). An owner or operator of a stationary reciprocating internal combustion engine (RICE) at a major or area source of HAP emissions is subject to this rule except if the stationary RICE is being tested at a stationary RICE test cell/stand. Therefore, if the engine remains on-site for greater than one year, meeting the definition of a stationary RICE, the engine may become subject to this subpart.

D. ARM 17.8, Subchapter 5 - Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is

incomplete until the proper application fee is paid to the Department. DCC submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7 - Permit, Construction and Operation of Air Contaminant Sources, including but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the potential to emit (PTE) greater than 25 tons per year (TPY) of any pollutant. DCC has a PTE greater than 25 TPY of particulate matter (PM), particulate matter with an aerodynamic diameter of less than 10 microns (PM_{10}), NO_x, carbon monoxide (CO), sulfur oxides (SO_x), and volatile organic compounds (VOCs); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. DCC submitted the appropriate permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. DCC submitted an affidavit of publication of public notice for the December 27, 2018 issue of the Big Horn County News, a newspaper of

general circulation in the Town of Hardin in Big Horn County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving DCC of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or modified source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions because of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives

another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of intent to transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 - Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the Federal Clean Air Act (FCAA) that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source because it is not a listed source and the source's PTE is below 250 tpy of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

a. PTE > 100 tpy of any pollutant;

b. PTE > 10 tpy of any one Hazardous Air Pollutant (HAP), PTE > 25 tpy of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

c. Sources with the PTE > 70 tpy of PM_{10} in a serious PM_{10} non-attainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #1435-08 for DCC, the following conclusions were made:

a. The facility's PTE is less than 100 tpy for any pollutant, excluding fugitive emission sources.

b. The facility's PTE is less than 10 tpy for any single HAP and less than 25

tpy year of a combination of all HAPs, excluding fugitive emission sources.

c. This source is not located in a serious PM_{10} non-attainment area.

d. This facility is subject to 40 CFR 60, Subpart A (General Provisions) and Subpart Y (Coal Preparation Plants).

e. This facility is not subject to any current NESHAP.

f. This source is not a Title IV affected source, nor a solid waste combustion unit.

g. This source is not an EPA designated Title V source.

Based on these facts, the Department has determined that DCC will be a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, DCC will be required to obtain a Title V Operating Permit.

III. BACT Determination

A BACT determination is required for each new or modified source. DCC shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized.

BACT applies to existing emitting units and those emitting units constructed or installed after March 16, 1979, when modification to the emitting unit requires a Montana air quality permit (ARM 17.8.752(1)(a)(i)). The proposed expansion does not include new or modified emission units and the emitting units currently in use at the mine existed prior to March 16, 1979. The ambient air modeling analysis conducted as part of this permit modification verified that existing pollution control requirements, when applied to the proposed mine expansion area, do not cause or contribute to a violation of an ambient air quality standard. Therefore, a BACT analysis is not required for this permitting action.

IV. Emission Inventory

Life of Mine Emissions Summary:

The projected production quantities were used to calculate the resulting emissions as part of the activities at the Northeast Extension. The highest potential to emit (PTE) occur in 2022. This year was modeled as having the highest potential impact on ambient air quality.

Year	Coal Production	Overburden Production	Acres Disturbed	PM_{10} (tons)	NO_x (tons)	CO(tons)	SO_2(tons)
2018	4,582,620	28,927,326	2,435	831	117.46	462.95	13.82
2019	5,808,070	30,204,098	2,208	831	124.17	489.38	14.61
2020	6,731,432	32,667,707	1,976	856	134.97	531.93	15.88
2021	11,070,324	56,257,059	2,097	1,222	231.65	912.97	27.25
2022	**16,140,169**	**89,797,460**	**2,054**	**1,623**	**367.48**	**1448.32**	**43.23**
2023	13,004,272	60,672,512	1,915	1,239	251.42	990.88	29.58

Year	Coal Production	Overburden Production	Acres Disturbed	PM_{10} (tons)	NO_x (tons)	CO(tons)	SO_2(tons)
2024	11,214,806	54,935,684	1,761	1,149	226.81	893.90	26.68
2025	10,230,514	43,579,173	1,523	1,012	181.91	716.93	21.40
2026	10,384,127	45,551,355	1,270	1,043	189.68	747.56	22.32
2027	9,589,799	47,365,265	1,129	1,047	195.44	770.25	22.99
2028	9,796,981	47,284,380	1,170	1,068	195.44	770.25	22.99
2029	8,591,334	42,863,529	1,171	1,000	176.73	696.53	20.79
2030	8,186,570	42,229,177	1,198	1,062	173.70	684.60	20.44
2031	7,706,536	39,005,553	1,220	1,024	160.66	633.19	18.90
2032	7,717,834	40,588,283	1,233	1,052	166.73	657.11	19.62
2033	5,830,114	32,767,875	1,215	886	134.01	528.15	15.77
2034	5,178,101	31,294,381	1,212	857	127.40	502.12	14.99

Table I. Estimated Particulate Matter (PM) Emissions – TPY

Activity (in year 2022)	PM_{10} (tons)	$PM_{2.5}$ (tons)
Scraper Topsoil Operations	33.85	3.38
Dragline Overburden Excavation	324.37	7.35
Shovel Overburden Excavation	9.44	1.43
Truck Overburden Haulage	352.30	35.23
Overburden Drilling	12.51	3.75
Overburden Blasting	12.37	0.71
Shovel Coal Loading	53.96	1.37
Truck Coal Haulage	313.22	31.32
Coal Truck Dump	0.70	0.11
Primary Crusher Coal	1.82	0.27
Secondary Crusher Coal	4.04	0.61
Conveyor Transfers	5.44	0.82
Stockpile ROM Coal - Wind Erosion	19.75	2.96
Stockpile ROM Coal - Dumping	1.51	0.23
Coal Loadout	1.13	0.17
Coal Drilling	1.11	0.33
Coal Blasting	1.68	0.10
Water Truck Dust Control	28.25	2.83
Motor Grader Haul Road Repair	22.22	0.90
Bulldozer Overburden and Spoils	13.09	7.20
Reclamation Front Shovel	6.11	0.61
Reclamation Dump Trucks	13.98	1.40
Excavator	13.41	1.34
Backhoe	0.34	0.03
Support Vehicles	7.25	0.72
Pickup Trucks and Passenger Cars	10.68	1.07
Wind Erosion	273.23	40.98
Explosives Combustion	50.06	50.06
TOTAL FUGITIVE TONS/YEAR	1587.82	197.28

		Year 2022
Scraper Topsoil Operations	Topsoil density (ton/yd^3)	1.60
Source: AP-42, Table 11.9-4	Load/dump emission factor (lb/ton TSP)	0.0599
Ref: AP-42, Section 13.2.4	Topsoil moved (yd^3)	1,410,973
(topsoil removal and dumping)	Control factor	0%
	PM Emissions (tons)	**67.69**
	PM_{10} Emissions (tons)	**33.85**
	$PM_{2.5}$ Emissions (tons)	**3.38**
Dragline Overburden Excavation	Drop height (ft)	28.1
Source: AP-42, Tables 11.9-1, 3	Moisture (%)	3.2
	Overburden moved (bcy)	56,525,562
	PM Emission Factor (lb/yd^3)	0.0581
	PM_{10} Emission Factor (lb/yd^3)	0.0115
	$PM_{2.5}$ Emission Factor (lb/yd^3)	0.0003
	PM Emissions (tons)	**1642.35**
	PM_{10} Emissions (tons)	**324.37**
	$PM_{2.5}$ Emissions (tons)	**7.35**
Shovel Overburden Excavation	Average wind speed (mph)	7.4
Source: AP-42, Table 11.9-4	Average overburden moisture (%)	7.9
Ref: AP-42, Section 13.2.4	Emission factor (lb/ton TSP)	0.000576
	Overburden density (ton/bcy)	2.08
	Overburden moved (bcy)	33,271,898
	PM Emissions (tons)	**19.97**
	PM_{10} Emissions (tons)	**9.44**
	$PM_{2.5}$ Emissions (tons)	**1.43**
Truck Overburden Haulage	Industrial road constant - PM	4.9
Source: AP-42, Section 13.2.2	Industrial road constant - PM_{10}	1.5
	Industrial road constant - $PM_{2.5}$	0.15
	Mean vehicle weight (tons)	279
	Silt content (%)	8.4
	Control factor - water spray	75%
	Wet days per year	90
	Vehicle miles traveled	447,440
	PM Emissions (tons)	**1235.94**
	PM_{10} Emissions (tons)	**352.30**
	$PM_{2.5}$ Emissions (tons)	**35.23**
Overburden Drilling	Emission factor (lb/hole)	1.3
Source: AP-42, Table 11.9-4	Blasts per year	363.26
	Typical overburden depth per lift (ft)	70
	Typical blast area (ft^2)	95,347

	No. holes per blast at 30-ft spacing	105.94
	Total blast holes	38,485
	PM Emissions (tons)	**25.02**
	PM_{10} Emissions (tons)	**12.51**
	$PM_{2.5}$ Emissions (tons)	**3.75**
Overburden Blasting	Emission factor (lb/blast)	130.97
Source: AP-42, Table 11.9-1	**PM Emissions (tons)**	**23.79**
	PM_{10} Emissions (tons)	**12.37**
	$PM_{2.5}$ Emissions (tons)	**0.71**
Shovel Coal Loading	Coal surface moisture (%)	17.8
Source: AP-42, Tables 11.9-1, 3	Coal production (tons)	16,140,169
	PM Emissions (tons)	**295.69**
	PM_{10} Emissions (tons)	**53.96**
	$PM_{2.5}$ Emissions (tons)	**1.37**
Truck Coal Haulage	Industrial road constant - PM	4.9
Source: AP-42, Section 13.2.2	Industrial road constant - PM_{10}	1.5
	Industrial road constant - $PM_{2.5}$	0.15
	Mean vehicle weight (tons)	155
	Silt content (%)	8.4
	Control factor - chemical dust suppressant	80%
	Wet days per year	90
	Vehicle miles traveled	602,841
	PM Emissions (tons)	**1023.18**
	PM_{10} Emissions (tons)	**313.22**
	$PM_{2.5}$ Emissions (tons)	**31.32**
Coal Truck Dump	PM emission factor (lb/ton - Class III mine)	0.000696
Source: AP-42, Table 11.9-4	Coal delivered (tons)	16,140,169
and Table 13.2.4-1	Control efficiency	75%
	PM Emissions (tons)	**1.40**
	PM_{10} Emissions (tons)	**0.70**
	$PM_{2.5}$ Emissions (tons)	**0.11**
Primary Crusher Coal	PM emission factor (lb/ton - high moisture ore)	0.020
Source: AP-42, Table 11.24-2	Coal delivered (tons)	16,140,169
	Control efficiency	97.5%
	PM Emissions (tons)	**4.04**
	PM_{10} Emissions (tons)	**1.82**
	$PM_{2.5}$ Emissions (tons)	**0.27**
Secondary Crusher Coal	PM emission factor (lb/ton - high moisture ore)	0.050
Source: AP-42, Table 11.24-2	Coal delivered (tons)	16,140,169

	Control efficiency	97.5%
	PM Emissions (tons)	**10.09**
	PM_{10} Emissions (tons)	**4.04**
	$PM_{2.5}$ Emissions (tons)	**0.61**
Conveyor Transfers	Coal throughput (tons)	16,140,169
Source: AP-42, Section 13.2.4	Number of Transfers (applied to each ton of coal)	6
and Table 13.2.4-1	Average moisture content in coal (%)	4.5
	Average wind speed (mph)	7.4
	k for TSP (AP-42 13.2.4 Eq #1)	0.74
	k for PM_{10} (AP-42 13.2.4 Eq #1)	0.35
	k for $PM_{2.5}$ (AP-42 13.2.4 Eq #1)	0.053
	Control effiency (weighted average FOG/BH)	81%
	PM Emissions (tons)	**11.50**
	PM_{10} Emissions (tons)	**5.44**
	$PM_{2.5}$ Emissions (tons)	**0.82**
Stockpile ROM Coal - Wind Erosion	Stockpile area (combined acres)	15
Source: AP-42, Ch. 13.2.5	PM_{10} emission factor (tons/acre/year)	1.32
(see separate E.F. calculation)	PM_{10}/PM ratio	0.5
	$PM_{2.5}$ /PM_{10} ratio	0.15
	PM Emissions (tons)	**39.51**
	PM_{10} Emissions (tons)	**19.75**
	$PM_{2.5}$ Emissions (tons)	**2.96**
Stockpile ROM Coal - Dumping	PM emission factor (lb/ton - Class III mine)	0.005
Source: AP-42, Table 11.9-4	Coal delivered (tons)	2,421,025
	Control efficiency (water)	0.50
	PM Emissions (tons)	**3.03**
	PM_{10} Emissions (tons)	**1.51**
	$PM_{2.5}$ Emissions (tons)	**0.23**
Coal Loadout	Coal loaded (tons)	16,140,169
Source: AP-42, Table 11.9-4	PM Emission factor (lb/ton)	0.028
	Control efficiency (FOG)	99%
	PM Emissions (tons)	**2.26**
	PM_{10} Emissions (tons)	**1.13**
	$PM_{2.5}$ Emissions (tons)	**0.17**
Coal Drilling	Emission factor (lb/hole)	0.22
Source: AP-42, Table 11.9-4	Blasts per year	325.22
	Typical coal depth per lift (ft)	50
	Tyipcal blast area at 1.08 tons/cy (ft^2)	24,815
	No. holes per blast at 20-ft spacing	62.04
	Total blast holes	20,175

	PM Emissions (tons)	**2.22**
	PM_{10} Emissions (tons)	**1.11**
	$PM_{2.5}$ Emissions (tons)	**0.33**
Coal Blasting	Emission factor (lb/blast)	19.89
Source: AP-42, Table 11.9-1	**PM Emissions (tons)**	**3.23**
	PM_{10} Emissions (tons)	**1.68**
	$PM_{2.5}$ Emissions (tons)	**0.10**
Water Truck Dust Control	Industrial road constant - PM	4.9
Source: AP-42, Section 13.2.2	Industrial road constant - PM_{10}	1.5
	Industrial road constant - $PM_{2.5}$	0.15
	Mean vehicle weight (tons)	108
	Silt content (%)	8.4
	Control factor - chemical dust suppressant	80%
	Wet days per year	90
	Vehicle miles traveled	64,058
	PM Emissions (tons)	**92.29**
	PM_{10} Emissions (tons)	**28.25**
	$PM_{2.5}$ Emissions (tons)	**2.83**
Motor Grader Haul Road Repair	Average vehicle speed (mph)	7.00
Source: AP-42, Table 11.9-1	Vehicle miles traveled	148,197
	Control factor - chemical dust suppressant	80%
	PM Emissions (tons)	**76.85**
	PM_{10} Emissions (tons)	**22.22**
	$PM_{2.5}$ Emissions (tons)	**1.15**
Bulldozer Overburden and Spoils	Silt content (%)	6.90
Source: AP-42, Table 11.9-1	Moisture content(%)	7.90
and Table 11.9-3	Operating duty	80%
	Operating hours	43,486
	PM Emissions (tons)	**68.55**
	PM_{10} Emissions (tons)	**13.09**
	$PM_{2.5}$ Emissions (tons)	**1.83**
Reclamation Front Shovel	Spoil density (ton/yd^3)	1.67
Source: AP-42, Table 11.9-4	Production volume (yd^3/year)	396,123
	PM emission factor (lb/ton)	0.037
	PM Emissions (tons)	**12.21**
	PM_{10} Emissions (tons)	**6.11**
	$PM_{2.5}$ Emissions (tons)	**0.61**
Reclamation Dump Trucks	Industrial road constant - PM	4.9
Source: AP-42, Section 13.2.2	Industrial road constant - PM_{10}	1.5

	Industrial road constant - $PM_{2.5}$	0.15
	Mean vehicle weight (tons)	319
	Silt content (%)	8.4
	Control factor - water spray	75%
	Wet days per year	90
	Vehicle miles traveled	15,557
	PM Emissions (tons)	**45.65**
	PM_{10} Emissions (tons)	**13.98**
	$PM_{2.5}$ Emissions (tons)	**1.40**
Excavator	Soil density (ton/yd^3)	1.60
Source: AP-42, Table 11.9-4	Production volume (yd^3/year)	1,507,815
	PM emission factor (lb/ton)	0.037
	PM Emissions (tons)	**44.70**
	PM_{10} Emissions (tons)	**13.41**
	$PM_{2.5}$ Emissions (tons)	**1.34**
Backhoe	Spoil density (ton/yd^3)	1.60
Source: AP-42, Table 11.9-4	Production volume (yd^3/year)	23,061
	PM emission factor (lb/ton)	0.037
	PM Emissions (tons)	**0.68**
	PM_{10} Emissions (tons)	**0.34**
	$PM_{2.5}$ Emissions (tons)	**0.03**
Support Vehicles	Industrial road constant - PM	4.9
Source: AP-42, Section 13.2.2	Industrial road constant - PM_{10}	1.5
	Industrial road constant - $PM_{2.5}$	0.15
	Mean vehicle weight (tons)	10
	Silt content (%)	8.4
	Control factor - chemical dust suppressant	80%
	Wet days per year	90
	Vehicle miles traveled	47,884
	PM Emissions (tons)	**23.67**
	PM_{10} Emissions (tons)	**7.25**
	$PM_{2.5}$ Emissions (tons)	**0.72**
Pickup Trucks and Passenger Cars	Industrial road constant - PM	4.9
Source: AP-42, Section 13.2.2	Industrial road constant - PM_{10}	1.5
	Industrial road constant - $PM_{2.5}$	0.15
	Mean vehicle weight (tons)	4
	Silt content (%)	8.4
	Control factor - chemical dust suppressant	80%
	Wet days per year	90
	Vehicle miles traveled	106,619
	PM Emissions (tons)	**34.90**

	PM_{10} Emissions (tons)	**10.68**
	$PM_{2.5}$ Emissions (tons)	**1.07**
Wind Erosion	Acres exposed	2,054
Source: AP-42, Table 11.9-4	Emission factor (ton PM/acre/year)	0.38
	Control factor	30%
	PM Emissions (tons)	**546**
	PM_{10} Emissions (tons)	**273.23**
	$PM_{2.5}$ Emissions (tons)	**40.98**
Total Particulate Emissions (Tons)	**PM Emissions**	**5,356.9**
	PM_{10} Emissions	**1,537.8**
	$PM_{2.5}$ Emissions	**147.2**

Table II. Estimated Gaseous Emissions from Explosives (Fugitive)

Air Pollutant	Tons/Year
Oxides of Nitrogen	367.48
Sulfur Dioxide	0.000235
Carbon Monoxide	1,448.32
Volatile Organic Compounds	56

V. Existing Air Quality

The Decker mine is a surface coal mine located about 2 miles north of Decker, Montana, which includes the West, North, and East Decker mining areas. Sections 27, 28, 29, 31, 32, 33, and 34 of Township 8 South, Range 40 East; Sections 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24 and 28 of Township 9 South, Range 40 East; and Sections 3, 4, 5, 6, 7, 8, 9, 10 17, 18, and 19 of Township 9 South, Range 41 East, in Big Horn County, Montana. Big Horn County is designated as unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) and the Montana Ambient Air Quality Standards (MAAQS).

DCC has monitored particulate matter levels around the mine throughout the life of the operation. This data is on file with the Department. Attachment 1 describes the current air monitoring plan, which consists of six sites that monitor concentrations of PM_{10} and a meteorological site. The annual PM_{10} means from 2014 - 2018 have ranged from 15.7 to 21 $\mu g/m^3$. These concentrations ranged from about 31 to 42% of the annual standard of 50 $\mu g/m^3$. During the same time period, the maximum 24-hour concentrations have ranged from 68 to 410 $\mu g/m^3$. The PM_{10} standard of 150 $\mu g/m^3$ averaged over 24-hours is not to be exceeded more than once per year on average over a 3-year period. Site 7 had a 2nd highest 24-hr concentration of 339 $\mu g/m^3$; however, when the values from this site are averaged over three years, Site 7 remains in compliance with the form of the standard. The exceedances at Site 7 during that period were likely caused by oilfield traffic on an unpaved public road a few hundred meters from the sampler.

VI. Ambient Air Quality Impact Analysis

The Decker Mine is classified as a minor source under Title V and PSD regulations. The proposed expansion is scheduled to occur over a 15-year period (2019 through 2034). For demonstration with NAAQS and MAAQS compliance, the year with the maximum anticipated annual production rate was modeled. This assumption shows that the emitting units and sources of criteria pollutants will not violate ambient air quality standards.

DCC conducted a modeling analysis on CO, NO_2, PM_{10}, and $PM_{2.5}$ for various long and short-term averaging periods. All emissions were held constant across all averaging periods. DCC modeled 1329 volume sources (representing 21 source types), 17 area sources, and 4 open pit sources. Most of volume sources were equally spaced road segments, modeled for fugitive dust emissions of PM_{10} and $PM_{2.5}$.

Source and Activity Description Cross-reference Table:

Source	Emissions Activity Description	Model Type
ELOADOUT	East Decker Train Loadout	Volume
EPCRUSH	East Decker Primary Crusher	Volume
ESCRUSH	East Decker Secondary Crusher	Volume
EXFER1	East Decker Conveyor #1 Transfer	Volume
EXFER2	East Decker Conveyor #2 Transfer	Volume
EXFER3	East Decker Conveyor #3 Transfer	Volume
EXFER4	East Decker Conveyor #4 Transfer	Volume
EXFER5	East Decker Conveyor #5 Transfer	Volume
EXFER6	East Decker Conveyor #6 Transfer	Volume
Roads	Haul Roads	Volume
TDUMPE	East Decker Truck Dump	Volume
TDUMPW	West Decker Truck Dump	Volume
WLOADOUT	West Decker Train Loadout	Volume
WPCRUSH	West Decker Primary Crusher	Volume
WSCRUSH	West Decker Secondary Crusher	Volume
WXFER1	West Decker Conveyor #1 Transfer	Volume
WXFER2	West Decker Conveyor #2 Transfer	Volume
WXFER3	West Decker Conveyor #3 Transfer	Volume
WXFER4	West Decker Conveyor #4 Transfer	Volume
WXFER5	West Decker Conveyor #5 Transfer	Volume
WXFER6	West Decker Conveyor #6 Transfer	Volume
EFACWIND	East Decker Facilities wind erosion area	Area
P13NREC	Pit 13 North Reclamation	Area
P13NSTRIP	Pit 13N Stripping	Area
P15REC	Pit 15 Reclamation	Area
P15STRIP	Pit 15 Stripping	Area
P17REC	Pit 17 Reclamation	Area
P17STRIPA	Pit 17 Stripping Parcel A	Area

Source	Emissions Activity Description	Model Type
P17STRIPB	Pit 17 Stripping Parcel B	Area
P20REC	Pit 20 Reclamation	Area
P20STRIP	Pit 20 Stripping	Area
PIT13NWIND	Original OB spoil pile wind erosion area	Area
PIT13WIND	Pit 13 Exposed Area	Area
PIT15WIND	East Decker Pit 15 wind erosion area	Area
PIT17	Pit 17 Mining Activity	Area
PIT17WIND	Pit 17 wind erosion area	Area
PIT20WIND	Pit 20 wind erosion area	Area
WFACWIND	West Decker Facilities wind erosion area	Area
PIT13	Pit 13 Mining Activity	Open Pit
PIT13N	Pit 13N Mining Activity	Open Pit
PIT15	Pit 15 Mining Activity	Open Pit
PIT20	Pit 20 Mining Activity	Open Pit

The table below reports the total emissions modeled for each pollutant.

Source	Model Type	Modeled Emissions (Tons/Year)			
		PM_{10}	$PM_{2.5}$	CO	NO_2
ELOADOUT	Volume	0.848	0.127	NA	NA
EPCRUSH	Volume	1.363	0.206	NA	NA
ESCRUSH	Volume	3.028	0.456	NA	NA
EXFER1	Volume	0.090	0.013	NA	NA
EXFER2	Volume	0.090	0.013	NA	NA
EXFER3	Volume	0.090	0.013	NA	NA
EXFER4	Volume	3.629	0.543	NA	NA
EXFER5	Volume	0.090	0.013	NA	NA
EXFER6	Volume	0.090	0.013	NA	NA
Roads	Volume	332.740	32.197	NA	NA
TDUMPE	Volume	0.526	0.079	NA	NA
TDUMPW	Volume	0.175	0.026	NA	NA
WLOADOUT	Volume	0.282	0.044	NA	NA
WPCRUSH	Volume	0.455	0.070	NA	NA
WSCRUSH	Volume	1.008	0.153	NA	NA
WXFER1	Volume	0.031	0.004	NA	NA
WXFER2	Volume	0.031	0.004	NA	NA
WXFER3	Volume	0.031	0.004	NA	NA
WXFER4	Volume	1.210	0.180	NA	NA
WXFER5	Volume	0.031	0.004	NA	NA
WXFER6	Volume	0.031	0.004	NA	NA

Source	Model Type	Modeled Emissions (Tons/Year)			
		PM_{10}	$PM_{2.5}$	CO	NO_2
EFACWIND	Area	14.990	2.249	NA	NA
P13NREC	Area	29.432	2.943	NA	NA
P13NSTRIP	Area	6.066	0.804	NA	NA
P15REC	Area	9.181	0.918	NA	NA
P15STRIP	Area	1.463	0.146	NA	NA
P17REC	Area	29.639	2.964	NA	NA
P17STRIPA	Area	1.581	0.158	NA	NA
P17STRIPB	Area	4.426	0.587	NA	NA
P20REC	Area	88.250	8.825	NA	NA
P20STRIP	Area	11.196	1.120	NA	NA
PIT13NWIND	Area	29.487	4.424	NA	NA
PIT13WIND	Area	31.330	4.701	NA	NA
PIT15WIND	Area	36.859	5.530	NA	NA
PIT17	Area	142.253	17.079	334.152	84.790
PIT17WIND	Area	47.179	7.079	NA	NA
PIT20WIND	Area	97.675	14.655	NA	NA
WFACWIND	Area	30.170	4.524	NA	NA
PIT13	Open Pit	205.613	24.651	164.621	41.765
PIT13N	Open Pit	66.052	8.637	295.703	75.004
PIT15	Open Pit	31.009	6.718	62.424	15.841
PIT20	Open Pit	328.053	39.300	591.389	150.079
Total		**1587.777**	**192.180**	**1448.290**	**367.480**

The MAAQS/NAAQS compliance demonstrations were conducted using the latest available version of AERMOD and associated preprocessors. Specifically:

- AERMOD version 18081: Air dispersion model
- AERMET version 18081: processes NWS meteorological data for input to AERMOD
- AERMINUTE version 15272: processes 1-minute NWS wind data to generate hourly average winds for input to AERMET
- AERSURFACE version 13016: processes 1992 National Land Cover Data surface characteristics for input to AERMET
- AERMAP version 18081: Processes National Elevation Data from the USGS to determine elevation of sources and receptors for input into AERMOD
- Lakes AERMOD View Version 9.6.5: GUI used for easier processing of AERMOD inputs and outputs

Regulatory default options were used for the model runs, with three exceptions. For NO_2 modeling, AERMOD was configured to use the Tier 2 ARM method, with a non-default minimum ambient ratio of NO_2/NO_x of 0.2. EPA's default ratio (0.5) is based on nationwide ambient monitoring data. Since the only source of NO_2 modeled emissions is from explosives, an alternative ratio was used based on a literature citation for ANFO combustion.

For PM_{10} modeling, the Dry Deposition option was selected, with Option 1 for modeling particle size distribution. Fugitive dust emissions are the primary sources of PM_{10} near-field impacts and EPA studies[1] have established the tendency for ground-level, fugitive dust emissions to partially settle out within a short distance of the emission source.

The particle size distribution was cited from a modeling protocol submitted by Rosemont mine in Arizona[2], which applied AP-42 emission factors to fugitive dust emissions from haul roads. For PM_{10} sources associated with crustal materials, the particle distribution input into AERMOD are summarized below.

Particle Size (µm)	Fraction	Density (g/cm^3)
2.2	0.069	2.65
3.17	0.128	2.65
6.1	0.385	2.65
7.82	0.224	2.65
9.32	0.194	2.65

For coal handling activities, the particle size distribution was obtained from the New Mexico Environmental Department's recommendations[3] on coal handling emission factors for the modeling of plume depletion. For PM_{10} sources associated with coal handling activities, the particle distribution input into AERMOD is summarized below.

Particle Size (µm)	Fraction	Density (g/cm^3)
1.57	0.078	1.5
3.88	0.27	1.5
7.77	0.652	1.5

Lastly, AERMET was run to adjust the surface friction velocity under low-wind/stable conditions (ADJ_U*). EPA has adopted the ADJ_U* option in AERMET as a regulatory option for use in AERMOD for sources using standard National Weather Service airport meteorological data and for sources where peak impacts are likely to occur during low wind speeds and stable conditions.

Rural dispersion coefficients were applied because all of Montana currently meets this criterion. Surface metrological data was obtained from the National Weather Service site at the Sheridan County Airport (WBAN 24029) with missing hours supplemented from an on-site meteorological station located at the facility. Data from 2012 through 2016 was used for the modeling analysis. The Riverton, Wyoming Upper Air station (WBAN 24061) was used for upper air data.

Source parameters were provided by DCC and remained constant across all pollutants and averaging times. The tables below outline the source parameters used for volume, area, and open pit sources for the facility.

1 EPA 1994, Development and Testing of a Bry Deposition Algorithm (Revised), Publication #EPA-454/R-94-015; April, 1994.
2 https://www.rosemonteis.us/sites/default/files/technical-reports/012005.pdf
3 NMENV 2007, Coal Handling Depletion Parameters, New Mexico Environmental Department, Air Quality Board Dispersion Modeling Guidelines, April 25, 2007 and https://www.env.nm.gov/wp-content/uploads/2017/01/ParticlesizedistributionforplumedepletionApr252007.xls

Volume source parameters for the facility operations are listed below.

Source	Release Height (m)	Init Sy (m)	Init Sz (m)
ELOADOUT	5	4.6	2
EPCRUSH	0.3	15.2	15.2
ESCRUSH	0.3	6.1	6.1
EXFER1	0.3*	6.1	3
EXFER2	30	6.1	3
EXFER3	5	6.1	3
EXFER4	65	6.1	3
EXFER5	5	6.1	3
EXFER6	5	6.1	3
TDUMPE	0.3	15.116	0
TDUMPW	0.3	15.116	0
WLOADOUT	5	4.6	2
WPCRUSH	0.3	15.2	15.2
WSCRUSH	0.3	6.1	6.1
WXFER1	5	6.1	3
WXFER2	30	6.1	3
WXFER3	5	6.1	3
WXFER4	60	6.1	3
WXFER5	5	6.1	3
WXFER6	5	6.1	3
Access Roads	4.25	10.7	3.95
Haul Roads	4.25	5.58	3.95

*Release height of EXFER1 was modeled at 0.3 m but is more accurately represented by 5 m. However, a single-source modeling analysis submitted with the MAQP application demonstrated that the effect of correcting the height had no effect (to 2 decimal places) of the top 20 refined model receptors. Other receptors showed a slight reduction, leading to the conclusion that the modeled results with the lower release height are either unchanged or conservative.

Area source parameters for the facility operations are listed below.

Source	Release Height (m)	Init X (m)	Init Y (m)	Angle (deg)	Init Sz (m)
EFACWIND	0	360	300	0	0
P13NREC	1	156	1481	52	0
P13NSTRIP	1	782	137	-61	0
P15REC	1	675	100	-88.936	0
P15STRIP	1	740	100	-88.58	0
P17REC	1	150	1500	13	0
P17STRIPA	1	400	200	-76.304	0
P17STRIPB	1	1737	45	0	0
P20REC	1	2067	137	0	0
P20STRIP	1	2067	274	0	0
PIT13NWIND	0	1600	500	0	0

Source	Release Height (m)	Init X (m)	Init Y (m)	Angle (deg)	Init Sz (m)
PIT13WIND	0	1700	500	-38	0
PIT15WIND	0	1000	1000	0	0
PIT17	5	300	750	13	0
PIT17WIND	0	1600	800	-77.5	0
PIT20WIND	0	2500	1060	0	0
WFACWIND	0	600	900	0	0

Open pit source parameters for the facility operations are listed below.

Source	Release Height (m)	Init X (m)	Init Y (m)	Pit Volume (m^3)	Angle (deg)
PIT13	30	1372.25	144	12837094	-1
PIT13N	30	104	946	6391392	52
PIT15	30	150	700	6821192	1
PIT20	30	2067	229	30750130	0
PIT13	30	1372.25	144	12837094	-1
PIT13N	30	104	946	6391392	52
PIT15	30	150	700	6821192	1
PIT20	30	2067	229	30750130	0
PIT13	30	1372.25	144	12837094	-1
PIT13N	30	104	946	6391392	52

Background concentrations were collected the following sites: DCC onsite monitors, the Meadowlark site in Sheridan, Wyoming (56-033-1003), the Thunder Basin site in Campbell County, Wyoming (56-005-0123), and the Sieben Flats NCore monitoring station in Montana (30-049-0004). The concentrations were all calculated using 2012-2016 data. Five years of PM_{10} data collected onsite by DCC at their most upwind location was used as the PM_{10} background concentration. The Sheridan, Wyoming site provided the $PM_{2.5}$ background values. This site is located approximately 20 miles south of the mine, resides among similar land characteristics and is likely impacted by the same regional $PM_{2.5}$ sources. The $PM_{2.5}$ concentration is conservative because of the anthropogenic impacts from Sheridan itself. The NO_2 numbers were from the IMPROVE site located at Thunder Basin. This site is located approximately 80 miles to the southeast of the mine, at a rural location purposed for reporting regional scale monitoring and visibility data for Thunder Basin National Grasslands. The Sieben Flats station monitors background air quality data as part of the National Core (NCore) multi-pollutant monitoring network which addresses monitoring objectives including long-term health assessments contributing to ongoing reviews of the NAAQS and the support of scientific research in public health, atmospheric science, and ecological science. Although the monitoring station resides approximately 280 miles northeast of the mine, it is located in an area of rural, agricultural land where the reported CO concentrations are likely reflective of the background CO concentrations at DCC.

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)	Monitoring Station
PM_{10}	24-hour	40.0[a]	5-year monitoring on site
	Annual	13.0[b]	
$PM_{2.5}$[(b)]	24-hour	17.34[c]	Sheridan's Meadowlark monitoring site
	Annual	5.46[b]	
CO[(b)]	1-hour	830[d]	Sieben Flat's NCore site
	8-hour	664[e]	
NO_2	1-hour	17[f]	Thunder Basin monitoring site
	Annual	3[g]	

(a) Calculated from the average of the yearly 2nd max 24-hour concentrations (2012-2016).
(b) Calculated from the average of the yearly means of the 24-hour concentrations (2012-2016).
(c) Calculated from the average of the yearly 98th percentile of 24-hour concentrations (2012-2016).
(d) Calculated from the average of the yearly 2nd max hourly concentrations (2012-2016).
(e) Calculated from the average of the yearly 2nd max 8-hour concentrations (2012-2016).
(f) Calculated from the average of the yearly 98th percentile of the hourly concentrations (2012-2016).
(g) Calculated from the max of the yearly means of the hourly concentrations (2012-2016).

The compliance demonstration for the modeled inputs against the NAAQS and MAAQS is shown below. There are two averaging considerations to note. The CO NAAQS states that the 1-hour and 8-hour averages are not to be exceeded more than once per year for each. Similarly, for the NO_2 MAAQS Annual standard, the one-hour average is not to be exceeded more than once per year. The high-2nd-high modeled output is an adequate concentration to compare against the standard, but the applicant chose to model the high-1st-high and the results are therefore conservative.

Pollutant	Avg. Period	Modeled Conc. ($\mu g/m^3$)	Background Conc. ($\mu g/m^3$)	Ambient Conc. ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	% of NAAQS	MAAQS ($\mu g/m^3$)	% of MAAQS
PM_{10}	24-hr	103.29[a]	40.0	143.28	150	96%	150	96%
	Annual	24.68[b]	13.0	37.68	------	------	50	75 %
$PM_{2.5}$	24-hr	13.27[c]	17.34	30.6	35	87%	------	------
	Annual	4.22[d]	5.46	9.68	12	81%	------	------
NO_2	1-hr	144.14[e]	17	161.14	188	86%	564	32%[h]
	Annual	15.49[b]	3	18.49	100	18%	94	20%
CO	1-hr	2729[f]	830	3559	40,000	9%	26,350	14%
	8-hr	738[g]	664	1402	10,000	14%	10,000	14%

(a) Concentration is the high-6th-high modeled 24-hour average over a 5-year metperiod.
(b) Concentration is the highest annual mean averaged over the modeled five-year met period.
(c) Concentration is the high-8th-high modeled 24-hour average over a 5-year metperiod.
(d) Concentration is the highest annual average over the modeled five-year met period.
(e) Concentration is the high-8th-high modeled hourly average over a 5-year met period.
(f) Concentration is the high-1st-high modeled hourly average over a 5-year met period.
(g) Concentration is the high-1st-high modeled 8-hour average over a 5-year met period.
(h) Modeled concentration is the high-1st-high modeled impact over a 5-year met period. High-1st-high concentration is 161.5 μg/m^3 and was not included in the table. With the addition of the 17 μg/m^3 background value the ambient impact is 32% of the MAAQS.

Modeled results of the maximum production year indicate the 24-hr PM_{10} standard are at 96% of the NAAQS, after additional hot-spot receptors were examined. This concentration was predicted right at a northern boundary of the eastern side of the mine. The 24-hr $PM_{2.5}$ and annual $PM_{2.5}$ concentrations were modeled at 87% and 81% of the NAAQS, respectively, and were predicted in the same proximity as the PM_{10} hot spot. The NO_2 1-hour concentration was modeled at 86% of the NAAQS, and occurred near the eastern edge of the eastern part of the mine. Given the modeling approach of assuming the highest emitting activities occur at the same time, for the highest anticipated production year, emission estimates are generally over-stated and since no pollutant is over either the NAAQS or MAAQS for any averaging period, the proposed project has demonstrated compliance with the NAAQS and MAAQS.

The Department determined, based on the modeling analysis, accompanying assumptions and conditions established in MAQP #1435-08 that the impacts from this permitting action will be minor. The Department believes it will not cause or contribute to a violation of any ambient air quality standard. The full modeling analysis submitted with the MAQP application, is on-file with the Department.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?

		7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DCC has submitted an application (AM2) to amend the East Decker Surface Mining Permit (SMP C1983007) to the Department's Coal and Opencut Mining program. The mine expansion application is currently being reviewed by the Coal Section. A completeness deficiency notice was sent to DCC from the Coal Section on May 2nd, 2019. Once the coal application is deemed complete, the Coal Section will begin the acceptability review and determine whether an Environmental Impact Statement is warranted.

Permit Analysis Prepared by: Rhonda Payne
Date: April 18, 2019

DEPARTMENT OF ENVIRONMENTAL QUALITY
Air, Energy & Mining Division
Air Quality Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Decker Coal Company

Montana Air Quality Permit number (MAQP): 1435-08

EA Draft: 5/10/2019
EA Final:
Permit Final:

1. *Legal Description of Site:* Sections 27, 28, 29, 31, 32, 33, and 34 of Township 8 South, Range 40 East; Sections 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24 and 28 of Township 9 South, Range 40 East; and Sections 3, 4, 5, 6, 7, 8, 9, 10 17, 18, and 19 of Township 9 South, Range 41 East, in Big Horn County, Montana.

2. *Description of Project*: On November 30, 2018 the Department of Environmental Quality (Department) received a request from DCC to modify MAQP #1435-07 to include information associated with a proposed mine expansion, referred to as the Northeast Extension. This proposed area would add 1,651 acres to the Decker Mine disturbance area, where mining activities would occur for a period of 15 years, from 2018 through approximately 2034. The Department received additional information on February 21, 2019 and April 9, 2019.

   The proposed modification requires DCC to submit an ambient air quality modeling analysis and updated emissions inventory, which is based on the maximum anticipated production rate. The proposed expansion does not include new or modified emission units. The projected life-of-mine emissions inventory and air dispersion modeling analyses are based on equipment already included in the permit. The proposed expansion and associated activities do not result in an increase in the currently permitted maximum coal production rate of 16 million tons per year. No further limits were established as part of this permit action.

3. *Objectives of Project*: The issuance of MAQP 1435-08 would authorize DCC to extract bituminous coal and lignite up to 16 million tons per year.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality permit modification to the proposed facility. DCC would not be able to develop and mine coal in the expansion area and result in a loss of revenue for DCC. However, the Department does not consider the "no-action" alternative to be appropriate because DCC demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in MAQP #1435-08.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

   The Department of Environmental Quality (DEQ), under the Montana Environmental Policy Act (MEPA), in conjunction with the United State Department of Interior – Office of Surface Mining, Reclamation and Enforcement (OSMRE) are evaluating the mine application, moving toward conducting a formal Environmental Impact Statement (EIS). Any conclusions present within this preliminary assessment are based on information available to the Department at the time of this assessment. The conclusions of the EIS will supersede those presented within this EA. The Department will update this section or provide references once the EIS is final.

   A. *Terrestrial and Aquatic Life and Habitats*

   As required under the Sage Grouse Executive Order, the proposed project information was submitted to, and reviewed by the Montana Sage Grouse Oversight Team (MSGOT). The results of the MSGOT review were submitted to the Department with application materials for the proposed expansion project. Reference Section 7.H for details.

   The proposed mine expansion would result in particulate matter emissions and loss of terrestrial habitats by disturbances created by surface mining activities within the mine boundary. Conditions which control particulate matter would be required within MAQP #1435-08 to ensure significant air quality impacts would not occur. Such conditions would include specific best operating practices, requirement to maintain a fugitive dust control plan, and inherent reasonable precautions. In terms of air pollutant emissions affecting aquatic life and habitats, it is expected that particulate matter emissions would be consistent with operations currently in place at the mine. These effects are expected to be minor as MAQP #1435-08 contains conditions limiting the amount of pollutants emitted from mine processes. However, the potential effects would be determined through the formal EIS.

   B. *Water Quality, Quantity and Distribution*

   This project would be expected to have a limited effect on the quantity and distribution of water due to the use of water sprays for fugitive dust suppression. Any water spray used for dust suppression would likely result in the water being evaporated to the atmosphere shortly after its application which minimizes water quality concerns. Particulate matter emissions from disturbance of soils and underlying subsurface material would be deposited at varying distances within the mine boundary and beyond depending upon particle size, location of release and immediate meteorological conditions. However, due to the nature of pollutants and the generally

good dispersion in the area, only minor pollutant deposition on surface waters near the project area are expected to occur from these disturbances and associated roadways. In addition, air emissions from this source would not likely impact groundwater. Therefore, the Department has determined that the impacts to the water quality, quantity, and distribution would likely be minor. However, the potential effects would be determined through the formal EIS.

C. *Geology and Soil Quality, Stability and Moisture*

This project would be expected to impact the geology and soil properties from land disturbances associated with mining operations and material handling activity. The coal seam of economic interest on the DCC tracts is bituminous coal in the Decker coalfield. The removal of overburden and coal would impact the geology of the area; however, the impacts air emissions from mining activities associated with this extraction would have on geology are likely to be minor.

The project would be expected to impact soil quality, stability and moisture by mixing of soil profiles and elimination of existing soil structure. Disturbance of surface soils would result in soil losses due to wind erosion from exposed areas. Additionally, soil losses would result from water erosion of disturbed areas until they are stabilized by temporary seedings or final revegetation. However, the impacts from air emissions from mining activities on soil quality, stability and moisture are likely to be minor. MAQP #1435-08 would contain limitations and conditions to minimize the effect of the emissions to off-site aspects. However, the potential effects would be determined through the formal EIS.

D. *Vegetation Cover, Quantity, and Quality*

The project is expected to have impacts to vegetation cover, quantity and quality. Mining activity within the mine boundary will entail removal of existing plant communities. Thus, post-mining plant communities would be established through the revegetation process as areas are reclaimed. The particulate matter emissions from this project would be expected to have an impact on the surrounding vegetation with respect to cover, quantity and quality; however, any impacts from emissions or deposition of pollutants would be minor due to dispersion characteristics of the pollutants, prevailing atmospheric conditions, and the conditions that would be placed in MAQP #1435-08. However, the potential effects would be determined through the formal EIS.

E. *Aesthetics*

The aesthetics of the proposed mine site would be affected by the project. Temporary impacts resulting from active mine development and operation include: disturbance of the land surface, removal of vegetation, visible stockpiling of soils and overburden, visible heavy equipment and power lines, and traffic and noise. As it regards air quality impacts, construction and mining activities would release dust into the air, resulting in visible plumes at times. The deposition of particulate matter species would not likely have any significant impact on the aesthetics of the site.

Permanent impacts to the scenic resources would potentially occur at the site. The disturbed areas will be graded to approximate the original topography. Post mining vegetation would be similar to pre-mining vegetation, although shrubs and trees will require additional time to mature. Reclaimed topography will be similar but would be somewhat smoother in character due to limitations in landscapes constructed from backfilled spoils. Air pollutant impacts would cease shortly after mining concludes. Permanent impacts from the deposition of air pollutants would not be expected to occur. The formal EIS will address the temporary as well as permanent aesthetic impacts.

F. *Air Quality*

The area surrounding the proposed project is unclassifiable/attainment for the NAAQS for all criteria air pollutants. DCC has monitored particulate matter levels around the mine throughout the life of the operation. This data is on file with the Department. Attachment 1 of MAQP #1435-08 describes the current air monitoring plan, which consists of six sites that monitor concentrations of PM_{10} and a meteorological site. The annual PM_{10} means from 2014 - 2018 have ranged from 15.7 to 21 $\mu g/m_3$. These concentrations ranged from about 31 to 42% of the annual standard of 50 $\mu g/m^3$. During the same time period, the maximum 24-hour concentrations have ranged from 68 to 410 $\mu g/m^3$. The PM_{10} standard is 150 $\mu g/m^3$ averaged over a 24-hour period is not to be exceeded more than once per year on average over a 3-year period. Site 7 had a 2nd highest 24-hr concentration of 339 $\mu g/m^3$; however, when the values from this site are averaged over three years, Site 7 remains in compliance with the form of the standard. The remaining 5 sites are all in compliance with the 24-hr standard over the 2014-2018 time period.

An ambient air quality analysis was conducted as part of MAQP #1435-08. See Section IV of the permit analysis for more information. Modeled results of the maximum production year indicate the 24-hr PM_{10} standard are at 96% of the NAAQS, after additional hot-spot receptors were examined. This concentration was predicted right at a northern boundary of the eastern side of the mine. The 24-hr $PM_{2.5}$ and annual $PM_{2.5}$ concentrations were modeled at 87% and 81% of the NAAQS, respectively, and were predicted in the same proximity as the PM_{10} hot spot. The NO_2 1-hour concentration was modeled at 86% of the NAAQS, and occurred near the eastern edge of the eastern part of the mine. Given the modeling approach of assuming the highest emitting activities occur at the same time, for the highest anticipated production year, emission estimates are generally over-stated and since no pollutant is over either the NAAQS or MAAQS for any averaging period, the proposed project has demonstrated compliance with the NAAQS and MAAQS.

Air quality impacts from mining activities would be minor and would be mitigated by conditions that would be placed in MAQP #1435-08 and Attachment 1.

G. *Unique Endangered, Fragile, or Limited Environmental Resources*

As required under the Sage Grouse Executive Order, the proposed project information was submitted to, and reviewed by the Montana Sage Grouse Oversight Team (MSGOT). The results of the MSGOT review were submitted to the Department with application materials for the proposed project. Reference Section 7.H for details.

The Department contacted the Montana Natural Heritage Program, Natural Resource Information System (NRIS) to identify species of concern that may be found in the area where the proposed mining would occur. Search results have concluded that 31 species of concern. Area, in this case, would be defined by the township and range of the proposed mine site, with an additional 1-mile buffer. The known species of concern are the Black-tailed Prairie Dog, the Eastern Red Bat, the Hoary Bat, the Little Brown Myotis, the Swift Fox, the Townsend's Big-eared Bat, the American White Pelican, the Brewer's Sparrow, the Cassin's Finch, the Common Loon, the Common Tern, the Ferruginous Hawk, the Forster's Tern, the Franklin's Gull, the Golden Eagle, the Great Blue Heron, the Greater Sage-Grouse, the Loggerhead Shrike, the Red-headed Woodpecker, the Sage Thrasher, the Sharp-tailed Grouse, the Sprague's Pipit, the Yellow-billed Cuckoo, the Greater Short-horned Lizard, the Plains Hog-nosed Snake, the Snapping Turtle, the Western Milksnake, the Great Plains Toad, the Northern Leopard Frog, the Sauger and the Bald Eagle. The operation of the mine would likely cause direct and indirect impacts to unique endangered, fragile, or limited environmental resources, however to the extent these impacts are caused by air pollutant emissions is unknown. Based on the limited information available at this time, the Department is unable to determine the extent of impacts to unique endangered, fragile, or limited environmental resources created by the proposed mine project. Final impacts will be evaluated upon the conclusion and release of the final EIS.

H. *Sage Grouse Executive Order*

General Habitat Area

The Department recognizes that the site location is within a Greater Sage Grouse General Habitat Area as defined by Executive Order No. 12-2015. As the application for this project was received after the Executive Order effective date of 1/1/2016, this project is subject to review under the Executive Order. As required under the Executive Order, the proposed project was reviewed by the Montana Sage Grouse Oversight Team (MSGOT) and that information was submitted by the applicant with their application materials. Any mitigating impacts that were identified by MSGOT are as follows:

- Weed management is required within General Habitat for sage grouse. Reclamation of disturbed areas must include control of noxious weeds and invasive plant species, including cheatgrass (Bromus tectorum) and Japanese brome (Bromus japonicas).

I. *Demands on Environmental Resource of Water, Air and Energy*

The proposed project would necessitate an increase in the demand for environmental resources of water, air, and energy. Based upon the limited information available at this time the Department is unable to determine the extent of additional demands for these elements. Upon completion of the formal EIS the demand impacts on environmental resources of water, air and energy would be addressed.

J. *Historical and Archaeological Sites*

DCC is required to submit an ethnographic study as part of the mine application submitted to the Coal Section for review. The May 2, 2019 deficiency letter sent from the Department to DCC addressed the incompleteness of the ethnographic study that DCC is required to submit. This study would identify any historical and/or archaeological sites that may be present in the area of the expansion. Previous data searches conducted through the Montana Historical Society – State Historical Preservation Office (SHPO) indicate there have been several previously recorded sites within the designated search locale. At this time, the Department is not in the position to stipulate a position with respect to the impact of this project on historical and archaeological sites until a formal cultural resource inventory can be accomplished. The potential effects and mitigating measures would be determined through the formal EIS.

K. *Cumulative and Secondary Impacts*

With the exception of any consideration to the impacts for which the Department has determined that insufficient information is available; the overall cumulative and secondary impacts from the proposed project to the physical and biological receptors in the immediate area due to increase emissions of particulate from the proposed expansion would be expected to be minor. Air pollution from the facility would be controlled by the limitations and conditions in MAQP #1435-08. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as outlined within the air quality permit.

8. SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. *Social Structures and Mores*

It is not expected that the proposed expansion would affect social structures and mores in the area. The proposed expansion would occur on land owned by DCC. However, the formal EIS would more fully characterize the impacts on social structures and mores from the proposed expansion.

B. *Cultural Uniqueness and Diversity*

The proposed mine expansion is located in a fairly rural part of Big Horn County. Birney and Kirby are the closest communities to the mine. It is expected that the proposed mine expansion would bring a population influx and potentially impact cultural uniqueness and diversity. However, to what extent is currently unknown. Upon completion of the formal EIS the impacts on cultural uniqueness and diversity will be addressed.

C. *Local and State Tax Base and Tax Revenue*

It is anticipated that mine construction and operations would increase state and local tax revenue. The extent to which this impact would be realized is unknown at this time. The formal EIS would assess the mine expansion's impact to local and state tax base and tax revenue.

D. *Agricultural or Industrial Production*

The proposed mine expansion, including construction and coal development, represents significant new industrial development and expansion for the area immediately surrounding the mine site and throughout southeastern Montana. As these projects are carried out, and as the facilities go into operation, the industrial production of the region and the state as a whole, would be expected to change significantly. The formal EIS will assess the full impacts to agricultural and industrial production due to the mine expansion.

E. *Human Health*

The proposed mine expansion would not increase currently permitted coal mining production limits. Additionally, MAQP #1435-08 incorporates conditions and limitations to ensure that the facility would operate in compliance with all applicable air quality rules and standards. These rules and standards are designed to be protective of human health. As described in Section 7.F of this EA, the air emissions from this facility would be minimized by permit conditions that would be required in MAQP #1435-08 and Attachment 1.

F. *Access to and Quality of Recreational and Wilderness Activities*

There are no designated wilderness areas in the vicinity of the project area. Emissions from the proposed mine expansion would be like current emissions at the Decker mine and these impacts would be minimized because of the conditions that would be placed in MAQP #1435-08. Therefore, the associated impacts on the access to and quality of recreational and wilderness activities would likely be minor.

G. *Quantity and Distribution of Employment*

It is expected the construction and operation of the proposed project would have an impact on quantity and distribution of employment; however, the formal EIS would address to what extent these impacts would occur.

H. *Distribution of Population*

The proposed expansion project would require additional staffing from levels currently employed at the mine site. The communities surrounding the proposed mine site would likely experience an influx of population due to mine construction and operation. It is expected the construction and operation of the proposed expansion project would have an impact on the distribution of population; however, the formal EIS would address to what extent these impacts would occur.

I. *Demands for Government Services*

The proposed expansion project would increase the demands for government services. Traffic on existing roadways in the area would increase slightly from current mine actives. Government services would be required for acquiring the appropriate permits for the proposed project and to verify compliance with the permits that would be issued.

J. *Industrial and Commercial Activity*

The proposed mine expansion would include construction and coal development similar to what currently exists at the Decker mine site. This activity would occur over multiple years and decline as coal resources run out. As such, initial industrial and commercial activity would not be expected to impact the area.

K. *Locally Adopted Environmental Plans and Goals*

The Department is not aware of any locally adopted environmental plans or goals. State and federal air quality standards and air quality plans would apply to proposed site.

Cumulative and Secondary Impacts:

With the exception of any consideration to the impacts for which the Department has determined that insufficient information is available, cumulative and secondary economic and social impacts from the proposed expansion project are expected to occur, but would be fairly insignificant with respect to air quality. The Department believes that DCC would be expected to operate in compliance with all applicable rules and regulations as outlined in MAQP #1435-08.

Recommendation: Environmental Impact Statement (EIS) is required.

The DEQ and OSMRE will be conducting a formal Environmental Impact Statement (EIS) to address MEPA and NEPA for the proposed DCC mine expansion.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Quality Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

EA prepared by: R. Payne

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